

Company Program - A Student Venture

Production Department

PRODUCTION DEPARTMENT GUIDELINES

If your business is providing a service, the department would be called Operations.

The Production Department orders raw materials and supplies for product, establishes production or operations goals, develops strategies for organizing production and services, and monitors product/service quality. The efficiency of the department's production lines and the quality of its products or services will determine the success of your business.

EVENT MANAGEMENT

If you have chosen to conduct a repeated event (i.e. a car wash or bake sale) confirm in writing that you have access to the chosen location, and make sure the person you are dealing with is indeed the person in authority. You do not want to advertise and schedule your services only to find out you cannot use the site, or there are hidden costs. Be very careful about liability insurance in case anyone is hurt while on their property.

PURCHASING

The first step in producing a product or service is purchasing high-quality parts from vendors (suppliers) you can trust at a fair price. Work closely with the management team to purchase supplies. This includes office supplies, printing services, decorations for a sales booth, etc. – not just the raw materials for your business's products or services.

The Vice-President of Production is responsible for selecting product components, identifying vendors, and checking orders after they arrive.

- Evaluate the cost, availability, quantity and quality of supplies.
- Recommend the quantity of materials to purchase and place orders in a timely manner.
- Check all deliveries for shipping damage and completeness.
- Ensure that the company departments receive all their supplies following delivery and inspection.
- Monitor supplies and raw materials. Order additional supplies as needed.

Note: Your Consultant may have taken care of some of the initial responsibilities for purchasing supplies and materials for your starter product or service. Make sure they pass along the records to you. You will have full responsibility for all future orders.

Typically, you will use a purchase order (or P.O.) for each purchase you make. A P.O. is simply an order form that allows you to describe exactly what you want to buy and how many. Should you need to use P.O.s contact the Consultant for multi-part forms. A cash advance to go "shopping" must be returned with the excess cash and the receipt, recorded on the Purchase Record and returned to the Vice-President of Finance.

Determining order quantity

There are good reasons for ordering large or small quantities. You must decide what is best in your situation.

A large order provides:

- lower price and delivery costs
- less chance of running out of supplies. This is particularly significant if delivery time is lengthy.

A small order ensures:

- smaller cash investment
- few storage problems
- less chance of damage in storage.

Provincial Sales Tax (P.S.T.)

Provincial Sales Tax rates vary so check with your local JA Office. You do not pay P.S.T. on purchases of raw materials, since raw materials are being purchased for resale. (The consumer will pay a sales tax when the product is purchased.) The vendor must be told your provincial sales tax exemption number — this is available from your local JA Office.

Goods and Services Tax (G.S.T.)

Contact your local JA Office for clarification on the G.S.T.

Deliveries to the JA Office or other location

Ask the vendor to ship material prepaid rather than collect. Also, check with the staff where your business meets to determine the hours and location where materials can be delivered.

When you receive delivery, check the copy of the P.O. to be sure you received the quality and the quantity of goods you ordered. If the order is correct, authorize payment by approving the invoice

and giving it to the Vice-President of Finance.

To avoid confusion, instruct the vendor to print the JA Company name on the shipping label and invoice.

EVALUATING SUPPLY SOURCES AND NEGOTIATING CONTRACTS

Many JA companies use outside contractors. In this case, the Vice-President of Production would be responsible for negotiating price, delivery method and time schedule.

JA Companies frequently purchase materials from vendors who understand your needs. However, if you are dealing with businesses that do not ordinarily work with JA Companies, consider the following purchasing tips:

- Contact three or more suppliers.
- Obtain samples, prices, and a delivery quote.
- Evaluate each supplier on the basis of cost, quality, delivery time, and service. Most quotations have one or more of the following abbreviations for delivery terms:
 - F.O.B. (Freight on Board): Freight is paid by the seller to this point.
 - Terms: Payment terms state the time period in which invoices must be paid and the cash discount, if any, for early payment. The customary practice is thirty days with no discount. This is usually stated as, "Terms: Net 30 Days". Discounts are expressed as a percentage and time period, such as "2 percent discount if paid within ten days".
 - C.O.D. (Collect on Delivery): Payment is due at time of delivery.

- Confirm the order either by signing the quote and returning a copy, or by writing an agreement (a memo) that specifies all of the details. Ensure that you keep signed copies in the file.

Cost

Make sure that the price quotes you receive are for identical merchandise. Ask the first supplier contacted to recommend the weight and grade of material most suitable to the product. Obtain quotes from the other suppliers based on the same specifications. If a price seems too good to be true, it probably is.

Quality

Are you being offered factory seconds or outdated supplies? Compare appearance and strength of samples if they are from different manufacturers.

Quantity

Do you have to buy more than you need? It is unwise to buy a year's supply. The product may be unsuccessful or you may overestimate your needs.

Delivery

Compare delivered cost. A distant supplier's price may be lower, but the total cost including freight may be higher. Ask for a delivery date and how much time is required for a re-order.

Service

Can you get credit? Will you be charged interest? Will the vendor replace merchandise damaged in transit? May unused supplies be returned for cash?

The "Make or Buy" Decision

For each component, determine whether it would be more practical to manufacture it from raw materials, or to buy the component prefabricated. Reasons for a "buy" decision include:

- Lack of the proper equipment
- Insufficient skills to produce the item to desired quality standards.
- Lack of time.
- If in doubt, buy the component. It is better to start producing the final product too fast, rather than fall behind in meeting your production goals.

In making your decision, keep in mind the JA Company standard by-laws that require products and services to have value added by the company's members.

MAINTAIN PRODUCTION RECORDS AND MAKE REPORTS

Present reports on progress toward production goals at the Board of Directors and other company meetings. Provide information to the Final Report task force as requested.

PROVIDE LEADERSHIP AND SUPERVISE PRODUCTION

The Vice-President of Production is responsible for co-ordinating training and supervising the production staff. In some companies you will be given a staff of managers. Often, a Production Manager can be assigned to supervise a specific production line. Some companies also have Quality

Control Managers and Safety Managers. Nevertheless, you have the responsibility for all production activities in your business.

You will also have a leadership role to play in your business. The members will look to you for tips for improving efficiency and quality as well as in solving production problems.

Production Strategies

On an assembly line, each employee performs a different function as the product moves from station to station. This practice produces uniformity and high productivity and simplifies the training required. The development of the assembly line contributed to the growth of productivity in Canada in the first half of this century. In recent years, many businesses have tried other strategies that place greater emphasis on quality and worker satisfaction.

Job Enrichment

Greater pride in accomplishment and worker satisfaction may be achieved by incorporating one of the following procedures into the assembly line:

- Periodically rotate employees to different stations.
- Instead of having each employee perform a simple task, such as inserting a bolt, have each employee perform a more complex series of operations.
- Form employees into teams, with each team responsible for a particular phase of production. The team members decide who will perform each operation.

QUALITY ASSURANCE

Producing a high-quality product/service is essential to the success of your business for two major reasons:

First, consumers are more willing to purchase a product/service that meets their needs and expectations – no one wants to spend money for shoddy goods or services. Second, high-quality work leads to improved productivity. When employees feel responsible for producing a quality product or service there are fewer rejected products, less “rework” and, fewer returns.

Company members should strive for error-free performance. Industry attempts to accomplish error-free work by instituting programs such as “zero-defects,” or a production excellence program. It takes a total commitment on everyone's part to achieve this goal, but it is attainable!

Ask your Consultants to discuss ways their firms are trying to improve quality.

Quality criteria should include:

- **Durability.** Test under actual use.
- **Safety** to consumer.
- **Appearance/Workmanship.** Compare with competition. Which product would you buy?
- **Performance.** The product should be used/tested before packaging.
- **On Time Delivery.** Products and services should be delivered as promised.

Quality can be assured in several ways:

Provide Training

Help all company members develop their skills and understand their tasks. Your efforts will reduce scrap losses and improve your business's product or service.

Establish Quality Standards

Provide production/service staff with the information and measuring instruments necessary to be sure that the product conforms to design requirements at each step in the production process. Measuring equipment should be regularly checked for accuracy. Employees closest to a production process should be responsible for the quality checks. Encourage them to discover ways to improve quality and efficiency. Those involved in delivering the service must understand the need for quality and reliability.

Maintain Records

It is useful to keep records of the nature and frequency of defects. This will help you identify specific problem areas and make needed corrections.

Identify Nonconforming Material

Establish procedures for identifying, separating, or disposing of reworked or repaired items. Label all nonconforming material to prevent use, sale, and intermingling with conforming items.

Make a Final Quality Check

A final quality check should be made just before packaging. If the product meets all quality standards, affix a JA product label at this point.

PRODUCTION PITFALLS

Difficult Finishes

Finishes that require several coats or overnight drying will produce delays and storage problems.

Quick-drying spray paints, stains, and waxes are better than brush-on paints or varnish. Even a simple lemon oil application will provide a professional finish to good hardwoods.

You can use wood-grained contact paper to solve the drying problem and to conceal imperfections in material and workmanship. Although contact paper is more expensive than most finishes, it allows the use of inexpensive construction material such as composition board.

When applying spray paint, use a box to trap over spray.

Lack of Organization

A business can spend a lot of time setting up the production line and only a fraction on actual production.

At least one person should arrive early to set up the required equipment or tools.

Poor Planning

Keep the production line or service department supplied with raw materials.

Poor Inventory Management

Keep components and other supplies safely stored. Small items can be easily scattered and lost if not kept in proper containers. Material with polished surfaces can be easily marred if not stored carefully. Paint stored in poorly sealed cans may dry out or spill on other materials. Store flammables in fireproof containers.

Failure to Determine Re-order Points

Great production lines have ground to a halt for

lack of a bolt. Production/service employees must be paid whether the raw material needed is on hand or not.

To prevent this situation, determine the maximum number of products/service which can be produced each night and the delivery time for each component and service. With this information, establish a re-order point for each raw material item. Reorder when your inventory equals your re-order quantity.

ESTABLISH A SAFETY PROGRAM

Safe working conditions are extremely important in any business. Not only should you be concerned about the safety and welfare of the company members, but you should also realize that safety is good business. Unsafe conditions cause injuries, reduce productivity and result in damaged goods. Monitor the safety of working conditions. Evaluate the safety of product/operations procedures and enforce safety rules.

Accident Prevention

Your job is to prevent accidents. In some companies you will have the opportunity to appoint a Safety Manager. Here are a few tips for the person who takes on the task of ensuring the workers are safe.

- Inspect the work area before and after each meeting to identify hazards. Unsafe conditions require prompt attention. Often you will be able to eliminate the hazard yourself. (Example: discovering oily rags in a corner or in a locker.) In other situations, you will need your Consultant's help.
- Keep all company members aware of the importance of safe work habits. Observe the

actions of participants involved in production. Make certain that proper safety precautions are being followed and that there are no unsafe behaviours or procedures that might result in an accident. Discourage horseplay at all times.

- If you discover a hazard or observe an unsafe act, see that it is corrected immediately, before an accident occurs.
- Inspect tools and equipment before each session.
- Check protective equipment to see that it is in good condition.
- Set a good example! Be sincere and consistent in applying safety standards to your work.

Accident Investigation

When an accident occurs, the first concern is always for the injured. For minor accidents, the injured person should be taken to the staff for treatment. (Example: sawdust particles in the eye of member not wearing goggles.) When a serious accident occurs, an adult should take the injured person to the hospital for emergency treatment.

Once the injured person has been cared for, your job is only one-third complete. The second step is to thoroughly investigate the accident to learn the cause. The proper accident form must be completed as soon as possible following an accident. The third step involves making sure the necessary steps are taken to eliminate the possibility of another similar accident. Work with your Consultant to eliminate these hazards.

Proper Use of Tools

JA Companies are not permitted to use power tools. However, even the hand tools used by JA Companies can cause injuries. Members must be trained in the use of any tool they will be using.

Safety Rules

Eye Protection

- Wear impact-resistant goggles or safety spectacles if there is any danger from flying objects such as rivets, nailheads, glass or wood.
- Wear cut-type or side-shield type goggles, or face-fitting eye shields to protect against dust and small flying particles, which might come in from the sides.
- Follow instructions, rules and signs regarding eye protection.

Scissors and Shears

- Keep scissors and shears where they cannot be knocked off tables or desks. Points may pierce a shoe.
- Place scissors and shears in holder, or in drawers with points away from you so you won't be injured reaching for them.
- Pass scissors with handles first, blades together. Never, under any circumstances, toss them.
- If you must carry shears regularly, carry them in a belt sheath, points down - never in your pocket.
- Unless you need shears with sharp points, use rounded ones.
- Wear eye protection and gloves while using tin snips or metal-cutting shears.

Product Safety

You may feel that your product has good design features, has excellent durability and appearance, fills a need, is reasonably priced, and will return a fair profit. But, have you considered if the product or service is safe for your customers?

When selecting the product or service, care should be given to evaluating whether or not it has the potential to cause bodily injury or property damage. Ask yourself, does it contain any recognized hazardous materials or parts? Could it be easily misused? If there is a potential hazard involved in the use of the product or in the provision of the service, be sure that the label contains all the necessary warnings as to its use or possible misuse, as well as first aid and handling information.

The lack of a product/service safety program in your JA Company may result in:

- loss of repeat sales
- accidents, damage to property or person
- high scrap
- lost time
- delayed orders
- loss of commissions
- loss of public good will
- high overhead.

Make sure that all statements made by the company members during selling are accurate. Do not misrepresent what the product will or will not do. Do not misrepresent what you are offering with your service.

While Junior Achievement has insurance for product and service liability, we hope that your business won't need it. Use common sense in selection of

the product or service. Anything that is potentially hazardous to a customer should be avoided. Good, safe, reliable products and services produce successful JA companies. That's called product and service responsibility!

RECORD KEEPING RESPONSIBILITIES

Purchase Orders – if you require them

The JA Purchase Orders (P.O.) is a three-part form available from the Junior Achievement Office should you need them. They are useful if you are ordering supplies that are either large and requiring delivery or there is a time delay, or if the supplier needs to locate the supplies and ship at a later time. Either of these situations could result in delays in company production. Finding supplies immediately in stock are much less risky.

The top copy (white) should be given to the supplier. The second copy (yellow) goes to the Finance Department with the packing slip, invoice or receipt. The third copy (pink) is retained by the Production Manager or Purchasing Manager.

1. Record the name of the supplier and address, date, name of JA Company, and the mailing address of the JA Office.
2. Record the quantity of material being purchased, by item (i.e., 10 pieces)
3. Record the description of each material item being purchased, (i.e., 1" x 4" x 8' Pine boards).
4. Record the Unit Price of each material item being purchased, (i.e., \$1.50/foot).
5. Record the Sales Tax Exemption number (if applicable).
6. A Consultant and the Production/Service

Manager (or the Purchasing Manager should sign the order.

7. Obtain the signature of a JA staff person if the amount of purchase is expected to exceed \$100.00

Purchase Analysis Record

This form is useful for analyzing each different type of material required for each company product.

Purchased Materials Record

This form lists all the materials purchased and the vendor (supplier).

Production Record

This form tracks finished goods received from the Production Department and placed into inventory for selling. The Vice-President of Production turns finished goods over to the Marketing and Sales Department. This record indicates what finished products and in what quantity are turned over to Marketing & Sales. The Vice-President of Marketing and Sales must verify the information recorded by the Production Department and then put his/her initials in the appropriate place acknowledging receipt of the products. (Sample is provided.)

Unit Production and Sales

These bar graphs are filled in by both the Production Department and the Marketing and Sales Department. The Vice-President of Production graphs the total units produced for each week (gets this information from the Production Record). The Vice-President of Marketing and Sales or the Sales Manager takes the total units sold for each product by session as recorded on the Inventory Record and Sales Record. These amounts are recorded on the bar graph.

Accident Report

Your JA office must report every accident to its insurance agent. By filling in the Accident Report with the Consultant you can provide first-hand information that will be available to all JA Offices and may prevent similar accidents in the future. The Consultant has a copy of the Accident Report.

DEVELOP AND MONITOR A PRODUCTION (OPERATIONS) PLAN

The Vice-President of Production develops the production section of the company's Business Plan. This activity includes developing a "prototype" – making a few as practice to confirm that all the materials and tools are identified and determining how long it takes to make them. Some waste or damage should be anticipated during setup and trial. Goals for improvements in design or assembly over the operating period can be included in the plan and/or eligible for bonus if the management team agrees.

Product/Service: _____

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____
- g) _____
- h) _____
- i) _____
- j) _____
- k) _____
- l) _____
- m) _____
- n) _____
- o) _____
- p) _____
- q) _____
- r) _____

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PRODUCTION PLAN WORKSHEET CONTINUED

4. What materials have been ordered and when will they be delivered.

Materials	Delivery Date

PRODUCTION TRAINING

5. Who will be responsible for conducting training?

6. When will training take place?

7. When will production begin?

8. When will production end?

PRODUCTION PLAN WORKSHEET CONTINUED

VARIABLE COSTS

Your variable costs are the expenses that vary with the number of products or services you provide. For example, a word processing service will spend more on paper as the demand for its services increases.

Estimated Material Costs

9. This estimate is based on the materials needed for _____ units.

Materials	Quantity	Cost
TOTAL:		

10. What is the cost per unit? (The total cost of materials divided by the number of units to be produced.) \$ _____

12. What is the adjusted material cost/unit? (The answer in #10 x the factor.) \$ _____

11. What is the allowance factor for scrap/mistakes?
Examples: for a 10% allowance use a factor of 1:1
For a 20% allowance use a factor of 1:2
Factor: _____

FIXED COSTS

13. Estimate shop expenses (e.g., sandpaper, paint brushes, etc.)
\$ _____

PRODUCTION PLAN WORKSHEET CONTINUED

PRODUCTION GOALS

Take into consideration the number of members available for the production process and the number of sessions between the start and end of production.

Allow for lost productivity due to meetings.

The Vice-President of Marketing & Sales must agree that the estimated number of units produced can be sold.

14. How many units will your business produce in total?

15. What is your weekly production goal?

16. When will the first products be ready for sale?

LABOUR

Check with the Human Resources Department to determine the wage and salary rates it is recommending. Also, determine if it recommends a different wage rate for production team leaders or other staff. Then use the formula below to estimate labour costs for producing your product or service.

Number of workers x number of production periods x wages per period = labour costs

17. Approximately what is the projected labour cost?

\$

Directions: This form should be completed weekly. When the Vice-President of Production turns finished goods over to the Marketing Department, his or her initials indicate that the products have been counted and meet quality standards. The Vice-President of Marketing initials the form to acknowledge receiving products.

PURCHASE ANALYSIS RECORD

JA Company: _____ Date: _____

Product: _____

The purpose of this record is to help the Purchasing Manager in the process of buying the materials required for all operations. It should be the basis for the Purchasing Manager's report and should be reviewed by the management team. A separate analysis should be prepared for each different type of material required. The Purchasing

Manager should seek quotes from at least three different suppliers. The table below allows the Purchasing Manager to compare the supplier on different criteria. Note that it is not always wise to pick the supplier with the lowest price – the other terms should be looked at as well.

Type of Material (name and description)			Quantity of this Material Required		
Supplier	Price per Unit	Quantity Discount	Credit Terms	Delivery Terms	Return Policy

Vendor selected:

Date of first order delivery:

Quantity:

Why was this supplier selected?

Did the supplier provide any special assistance?
What kind?

In the end were you satisfied with this supplier?
Yes ☐ No ☐

Please explain why or why not you were satisfied.

Signed:

Purchasing Manager

Consultant

[illegible]

of Products

Session Date# Produced# Sold

Enter total number of units produced per session from Production Record, the total products sold per session from the Sales Record and then mark a point on the chart for each. Connect the points as the sessions go by.